

NATIONAL TRANSPORTATION SAFETY BOARD

Vehicle Recorder Division
Washington, D.C. 20594

October 30, 2017

Electronic Devices

Specialist's Factual Report
by Bill Tuccio, Ph.D.

1. EVENT

Location: Sac City, Iowa
Date: July 29, 2016
Aircraft: Air Tractor AT-402
Registration: N1016G
Operator: Watson Ag Aviation LLC
NTSB Number: CEN16LA292

On July 29, 2016, at 0914 central daylight time (CDT), an Air Tractor AT-402 airplane, N1016G, collided with power lines and impacted terrain near Sac City, Iowa. The commercial rated pilot was fatally injured and the airplane was destroyed. The airplane was registered to and operated by a private individual under the provisions of 14 *Code of Federal Regulations* Part 137 as an aerial application flight. Visual meteorological conditions prevailed at the time of the accident and no flight plan had been filed. The airplane departed Arthur N Neu Airport (CIN), Carroll, Iowa, at 0902 and was spraying in the area of Sac City Municipal Airport, (SKI), Sac City, Iowa.

2. DETAILS OF INVESTIGATION

The National Transportation Safety Board (NTSB) Vehicle Recorder Division received the following devices:

Device 1: Garmin Aera 510
Device 1 Serial Number: 1or003445

Device 2: SATLOC M3 CPU
Device 2 Serial Number: 1147-158884-003

The Garmin Aera 510 provided information consistent with the SATLOC and is not further discussed in this report.

2.1. SATLOC M3 CPU Device Description

The SATLOC M3 is part of an on-board control system designed to programmatically control agricultural, aerial spray operations based on vendor and user specified prescription maps. The SATLOC M3 can drive a cockpit mounted lightbar guidance system and a real-time graphic moving map display providing visual guidance to the pilot. Flow rates can be pilot selected or based on mapping created using a proprietary software

package called MapStar that runs on a desktop computer. The SATLOC M3 is capable of recording historical information to an internal, compact flash (CF) card. The Satloc M3 is supported by the SATLOC division of AgJunction, previously known as Hemisphere GPS.

2.1.1. SATLOC M3 CPU Data Description

The data extracted included the accident flight.

2.2. Plots and Tabular Data

Figures 1 and 2 show graphical overlays of the accident flight produced with Google Earth. Weather and lighting conditions shown are not necessarily representative of the accident flight conditions. Figure 2 shows spray “off” in red and spray “on” in blue.

The recording began at 9:02:37 CDT. At 9:13:54 CDT, the spraying “on” was recorded by the SATLOC, which turned off again at 9:14:05 CDT. Spraying turned “on” again at 9:14:49 CDT and continued until one second before the end of the recording at 9:14:53 CDT.

Tabular data used to generate these figures are included as attachment 1. This attachment is provided in electronic comma-delimited (*.CSV) format and includes time (CDT), altitude (feet), latitude, longitude, speed (in miles per hour), and spray on/off.

Figure 1. Overview of accident flight.

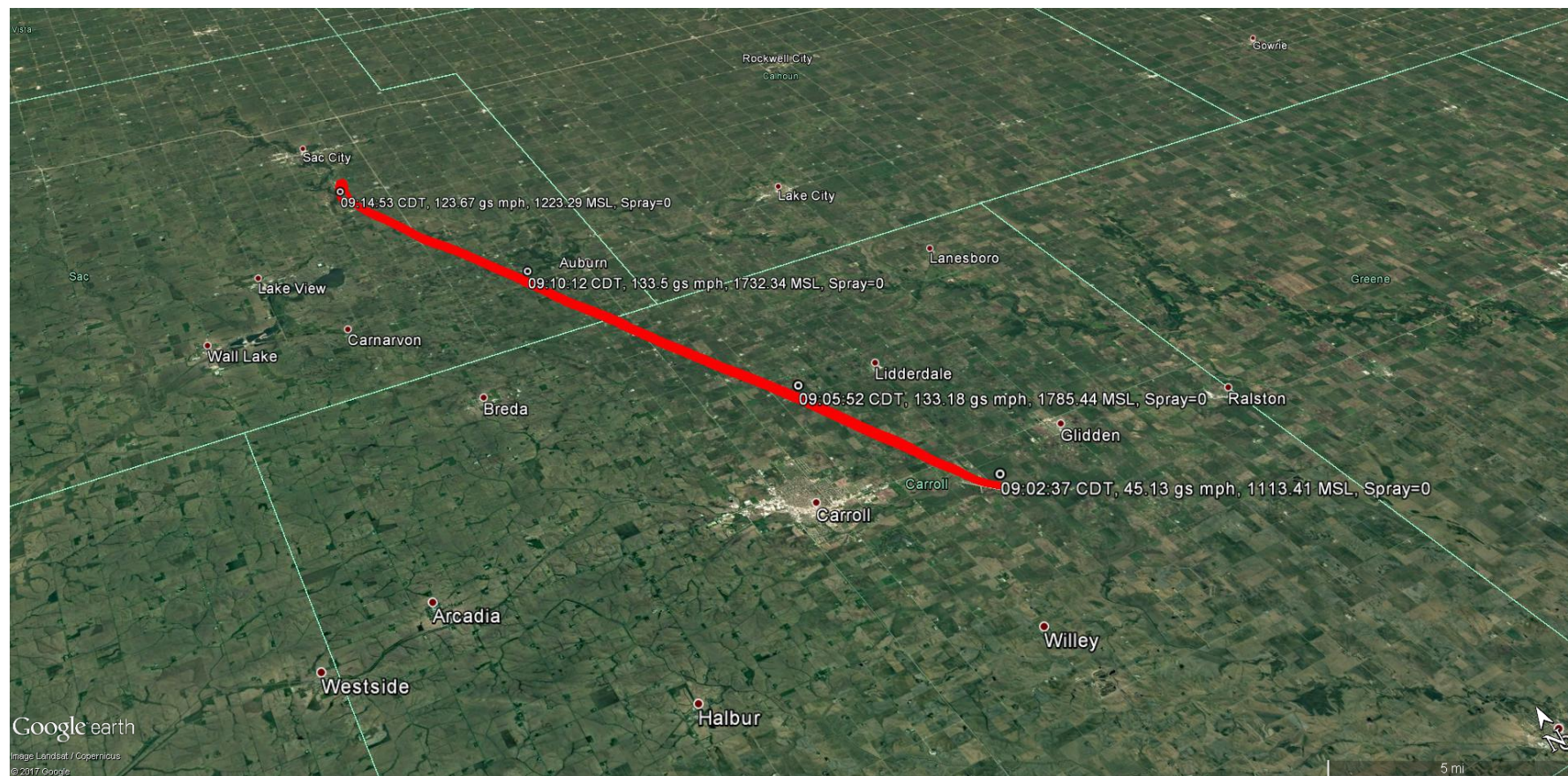


Figure 2. End of accident flight.

